BILL PURCELL
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
1600 SECOND AVENUE, NORTH
NASHVILLE, TENNESSEE 37208-2206

**Operational Division Policy No. 2004 - 01**

**Metro Water Services**
**Fats, Oils and Grease Management Policy**
**(FOG Program)**

**RATIONALE:**

1. MWS needs to prevent sewer system blockages and obstruction in its sewer system caused by the collection of fats, oils and greases.
2. MWS has prepared an enforcement guide to assist in the enforcement of the Metropolitan Code of Laws relative to the concentration of fats, oils and grease that can be discharged into the sewer.
3. The management of an effective FOG Program with the food service establishments, commercial facilities and industrial facilities will prevent sewer system overflows and reduce the operational costs of MWS.

**RECOMMENDATION:**

1. MWS will implement the Fats, Oils and Grease Management Policy as part of its industrial pretreatment program.
2. The "Food Services Establishment Enforcement Response Guide" part of the policy was approved by the Wastewater Hearing Authority at its October 7, 2004 meeting.

Policy:

1. The attached Fats, Oils and Grease Management Policy is adopted for Metro Water Services.

**Effective Date: November 1, 2004**

Recommended:

David M. Tucker, Assistant Director Date: 10/25/04
David Tucker

Approved as to legality of form:

Thomas H. Cross, Metropolitan Attorney Date: 10/25/04

Approved:

Scott Potter, Director Date: 26 OCT 04
Scott Potter

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# Metro Water Services
# Fats, Oils & Grease Management Policy

## Scope & Purpose:

To prevent sanitary and combined sewer system blockages, obstructions and overflows due to the contribution and accumulation of fats, oils and grease from food service establishments, commercial facilities and industrial facilities.

## Definitions:

1. Fats, Oils, & Grease (FOG): Organic polar compounds derived from animal and/or plant sources. FOG may be referred to as "grease" or "greases" in this section.

2. Food Service Establishment (FSE): Any establishment, business or facility engaged in preparing, serving or making food available for consumption. Single family residences are not a FSE, however, multi-residential facilities may be considered a FSE at the discretion of the Director. Food Service Establishments will be classified as follows:
   ***Class 1***: Deli – engaged in the sale of cold-cut and microwaved sandwiches/subs with no frying or grilling on site, Ice Cream shops and beverage bars as defined by NAICS 72213, Mobile Food Vendors as defined by NAICS 722330
   ***Class 2***: Limited-Service Restaurants (a.k.a. Fast Food Facilities) as defined by NAICS 722211 and Caterers as defined by NAICS 722320
   ***Class 3***: Full Service Restaurants as defined by NAICS 722110
   ***Class 4***: Buffet and Cafeteria Facilities as defined by NAICS 72212
   ***Class 5***: Institutions (Schools, Hospitals, Prisons, etc) as defined by NAICS 722310 but not to exclude self-run operations.

3. (Brown) Grease: Fats, oils and grease that is discharged to the grease control equipment.

4. (Yellow) Grease: Fats, oils and grease that has not been in contact or contaminated from other sources (water, wastewater, solid waste, etc…) and can be recycled.

5. Grease Control Equipment (GCE): A device for separating and retaining wastewater FOG prior to wastewater exiting the FSE and entering the Metro Water Services' sewer system. The GCE is so constructed as to separate and trap or hold fats, oils and grease substances from entering the Metro Water Services' sewer system. Devices include grease interceptors, grease traps, or other devices approved by the Director.

6. Grease Interceptor: Grease Control Equipment identified as a large tank, usually 500 gallon to 2,000 gallon capacity, that provides FOG control for a FSE. Grease interceptors will be located outside the FSE, unless a variance request has been granted.

7. Grease Trap: Grease Control Equipment identified as an "under the sink" trap, a small container with baffles, or a floor trap. For a FSE approved to install a grease trap, the minimum size requirement is the equivalent of a 20-gallon per minute/40 pound capacity trap. All grease traps will have flow control restrictor and venting

8. Grease Recycle Container: Container used for the storage of yellow grease.

9. NAICS - North American Industry Classification System. The website is found at: (http://www.census.gov/epcd/www/naics.html)

10. Tee (Influent & Effluent): A T-shaped pipe extending from the ground surface below grade into the grease interceptor to a depth allowing recovery (discharge) of the water layer located under the layer of FOG. Influent & Effluent T's are recommended to be made of PVC or equivalent material, and extend to within 12" to 15" of the bottom of the interceptor.

11. (Black) Water: Wastewater containing human waste, from sanitary fixtures such as toilets and urinals.

12. (Gray) Water: Refers to all other wastewater other than black water as defined in this section

## General Requirements:

1. All existing Food Service Establishments (FSEs) are required to have grease control equipment (GCE) installed, maintained and operating properly.
2. All FSEs will be required to maintain records of cleaning and maintenance of GCE. GCE maintenance records include, at a minimum, the date of cleaning/maintenance, company or person conducting the cleaning/maintenance, amount of grease wastewater removed. Grease waste hauler completed manifest will meet this requirement.
3. GCE maintenance records will be available at the FSE premises so they can be provided to Metro Water Services or their representative, and/or the Metro Health Department. The FSE shall maintain GCE maintenance records for three (3) years.
4. No FSE will discharge oil and grease in concentrations that exceed Metro Water Services instantaneous grab limit for oil and grease.
5. All FSEs are required to dispose of yellow grease in an approved container, where contents will not be discharged to any storm water grate, drain or conveyance. Yellow grease, or any oils or grease, poured or discharged into the FSE sewer lines or Metro Water Services sewer system is a violation of this ordinance.

6. Owners of Commercial Property will be held responsible for wastewater discharges from leaseholder on their property.
7. All establishments with grease control equipment must have their grease interceptor or grease trap inspected and certified annually. Certification can only be performed by an approved inspector that has attended and passed Metro Water Services ***Grease Interceptor / Grease Trap Certification course.***

**New Food Service Establishment, Upgrading of Existing Food Service Establishment or Change of Ownership of Existing Food Service Establishment Requirement:** Any new FSE, upgrading of an existing FSE or change of ownership of existing FSE will be required to install and maintain a grease interceptor. Food service establishments in one of these categories must submit a FOG plan to Metro Water Services for approval. The FOG plan includes identification of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc…); the number and size of dishwashers, sinks, floor drains, and other plumbing fixtures; type of FSE classification; type of food to be served; and plans for the grease interceptor dimensions and location. Metro Water Services will review the FOG plan, grease interceptor sizing and approve, or make changes as necessary to aid in the protection of a FOG discharge from the FSE.

Existing Food Service Establishments will be phased in to compliance through their FSE permit and a Compliance Schedule. The Compliance Schedule will be an Agreed Schedule, with all Food Service Establishments coming into compliance with this policy by May 1, 2008.

Variance to Grease Interceptor Installation: At the discretion of the Director, some FSEs may receive a variance from the required installation of a grease interceptor.

## Grease Control Equipment Sizing:

***Minimum*** acceptable size of grease control equipment for each FSE Classification will be as follows:
***Class 1***: Deli, Ice Cream shops, Beverage Bars, Mobil Food Vendors- 20gpm/40 pound Grease Trap
***Class 2***: Limited-Service Restaurants / Caterers - 500 gallon Grease Interceptor
***Class 3***: Full Service Restaurants- 1,000 gallon Grease Interceptor
***Class 4***: Buffet and Cafeteria Facilities- 1,500 gallon Grease Interceptor
***Class 5***: Institutions (Schools, Hospitals, Prisons, etc)- 2,000 gallon Grease Interceptor

To calculate the appropriate size GCE, the following formula will be used:
Fixture Units (total) x Facility type multiplier x 36 (retention time) = Size of Interceptor (gals.)

Should the size of the interceptor calculate to 499 gallons or less with the formula above:
Size of interceptor (gals.) x 0.75 (max. cap. of sink) = Flow(gpm) x hours(work day) = Acceptable Flow rate with retention time

## Grease Control Equipment Specifications

Grease Control Equipment must remove fats, oils, & grease at or below the Metro Code of Laws Title §15.60.70 limit of 100 mg/L. Failure to comply, will require enforcement action in accordance with the Enforcement Response Plan as required in Metro Code of Laws Title §15.60.390.

Grease traps must have the Plumbing Drainage Institute certification. The minimum acceptable size is rated at 20 gpm / 40lbs. All grease traps will be installed as per manufacturer specifications, which includes the flow restrictor and venting prior to the discharge entering the grease trap.

# Grease Interceptors

## Piping Design

1. The inlet and outlet piping shall have 2-way cleanout tees installed
2. The inlet piping shall enter the receiving chamber 2 ½" above the invert of the outlet piping.
3. On the inlet pipe, inside the receiving chamber, a sanitary tee of the same size pipe in the vertical position with the top unplugged shall be provided as a turndown. To provide air circulation and to prevent "air lock", a pipe (nipple) installed in the top tee shall extend to a minimum of 6" clearance from the interceptor ceiling, but not less that the inlet pipe diameter. A pipe installed in the bottom of the tee shall extend to a point of 2/3 the depth of the tank. ***See illustration.***
4. The outlet piping shall be no smaller than the inlet piping, but in no case smaller than 4" ID.
5. The outlet piping shall extend to 12" above the floor of the interceptor and shall be made of a non-collapsible material.
6. The outlet piping shall contain a tee installed vertically with a pipe (nipple) installed in the top of the tee to extend to a minimum of 6" clearance from the interceptor ceiling, but not less that the pipe diameter, with the top open. ***See illustration.***

## Baffles

1. The grease interceptor shall have a non-flexing (i.e. Concrete, steel, etc.) baffle the full width of the interceptor, sealed to the walls and the floor, and extend from the floor to within 6" of the ceiling. The baffle shall have an inverted 90 degree sweep fitting at least equal in diameter size to the inlet piping, but in no case less than 6" ID. The bottom of the sweep shall be placed in the vertical position in the inlet compartment 12" above the floor. The sweep shall rise to the horizontal portion, which shall extend through the baffle into the outlet compartment. The baffle wall shall be sealed to the sweep. ***See illustration.***
2. The inlet compartment shall be 2/3 of the total liquid capacity with the outlet compartment at 1/3 liquid capacity of the interceptor.

## Access Openings (Manholes)

1. Access to grease interceptors shall be provided by a minimum of 1 manhole per interceptor division (baffle chamber) and of 24-inch minimum dimensions

terminating 1 inch above finished grade with cast iron frame and cover. An 8" thick concrete pad extending a minimum of 12'' beyond the outside dimension of the manhole frame shall be provided. One manhole shall be located above the inlet tee hatch and the other manhole shall be located above the outlet tee hatch. A minimum of 24" of clear opening above each manhole access shall be maintained to facilitate maintenance, cleaning, pumping, and inspections.

2. Access openings shall be mechanically sealed and gas tight to contain odors and bacteria and to exclude vermin and ground water, in a manner that permits regular re-uses.
3. The manholes are to be accessible for inspection by the Department.

## Additional Requirements

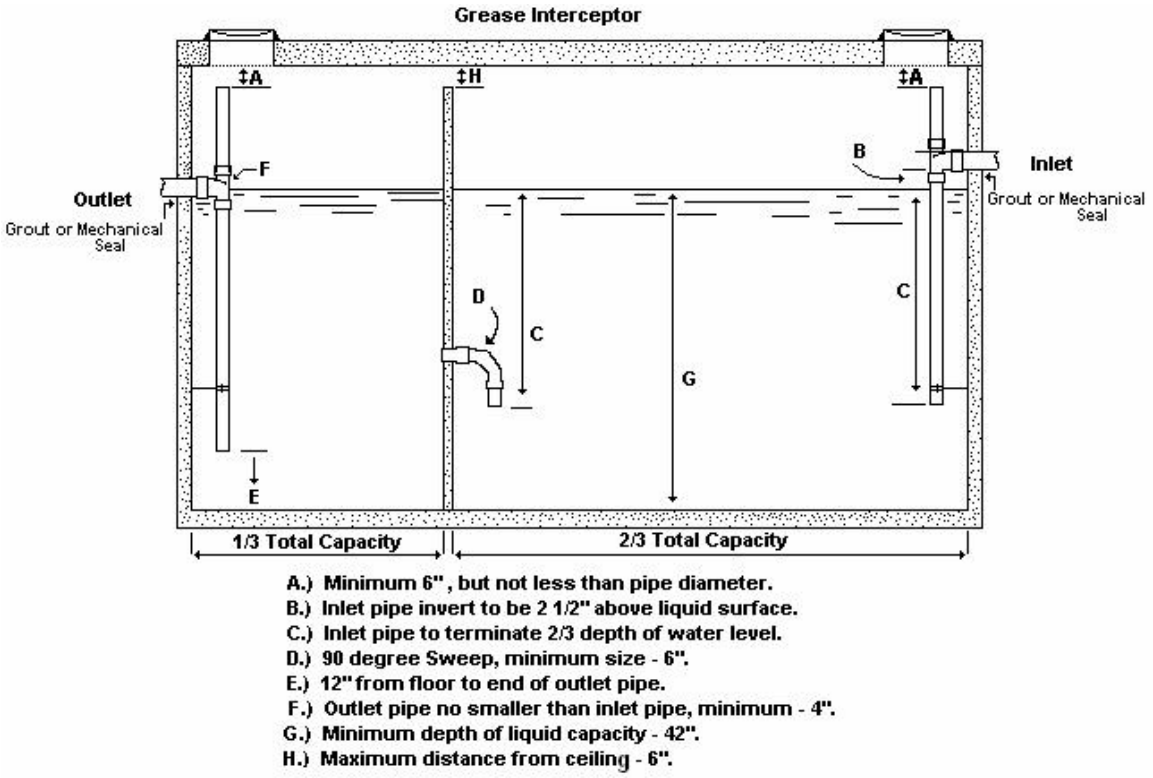
**Water Tight –** Precast concrete grease interceptors shall be constructed to be watertight. A static water test shall be conducted by the installer and timed so as to permit verification through visual inspection by regulatory agent. The water test shall consist of plugging the outlet (and the inlet if necessary) and filling the tank(s) with water to the tank top a minimum of 24 hours before the inspection. The tank shall not lose water during this test period. Certification by the plumbing contractor shall be supplied to the Department of Water Services prior to final approval of grease control equipment.

**Location –** Grease Control Equipment shall be located so as to be readily accessible for cleaning, maintenance, and inspections. They should be located close to the fixture(s) discharging the greasy wastestream.

**Cleaning –** Grease traps shall be cleaned at a frequency of not less than once / two weeks unless approved by the Department of Water Services. Approval will be granted on a case by case situation with submittal by the FSE documenting proof of proposed frequency. Grease interceptors must be pumped-in-full when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion is referred to as the "25 Percent Rule". At no time, shall the cleaning frequency exceed three months unless approved by the Department of Water Services. Approval will be granted on a case by case situation with submittal by the FSE documenting proof of proposed frequency.

**Responsibility –** Removal of the grease from the wastewater routed to a public or private sanitary system, is the responsibility of the user/owner.

**Construction Material –** Grease Interceptors shall be constructed of sound durable materials, not subject to excessive corrosion or decay, and shall be water and gas tight. Each interceptor shall be structurally designed to withstand any anticipated load to be placed on the interceptor (i.e. vehicular traffic in parking or driving areas).




## Grease Interceptor Cleaning/Maintenance Requirements

1. Grease Interceptor minimum size will be 500 gallon capacity, and maximum size will be 2,500 gallon capacity. If the FSE needs additional capacity, then grease interceptors will be installed in series.

2. Partial pump of interceptor contents or on-site pump & treatment of interceptor contents will not be allowed due to reintroduction of fats, oils and grease to the interceptor and pursuant to the Code Federal Regulation (CFR) § 403.5 (b) (8), which states "*Specific prohibitions.* In addition, the following pollutants shall not be introduced into a POTW: Any trucked or hauled pollutants, except at discharge points designated by the POTW".

3. Grease interceptors must be pumped-in-full when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion is referred to as the "25 Percent Rule". At no time, shall the cleaning frequency exceed three months unless approved by the Department of Water Services. Approval will be granted on a case by case situation with submittal by the FSE documenting proof of proposed frequency. Some existing FSEs in Class 2 through 5 will need to consider monthly pumping to meet this requirement.

4. Grease interceptor effluent-T will be inspected during cleaning and maintenance and the condition noted by the grease waste hauler's company or individual conducting the maintenance. Effluent-T's that are loose, defective, or not attached must be repaired or replaced immediately.

5. Grease Interceptors must have access manholes over the influent-T and effluent-T for inspection and ease of cleaning/maintenance. Access manholes will be provided for all separate compartments of interceptors for complete cleaning (i.e. interceptor with two main baffles or three compartments will have access manholes at each compartment).

## Grease Trap Cleaning / Maintenance Requirements

1. ***All*** grease traps will have flow control restrictor and vented. Failure to have restrictor and venting will be considered a violation.
2. Grease Trap minimum size requirement is a 20 gallon per minute / 40 pound capacity trap.
3. Grease Traps will be cleaned of complete fats, oils, and grease and food solids at a minimum of every two (2) weeks. If the FOG and food solids content of the grease trap is greater than 50%, then the grease trap must be cleaned every week, or as frequently as needed to prevent 50% of capacity being taken from FOG and food solids.
4. Grease Trap waste should be sealed or placed in a container to prevent leachate from leaking, and then disposed.
5. Grease Trap waste should not be mixed with yellow grease in the grease recycle container.

## "Additives" Prohibition for use as Grease Management and Control

1. Additives include but are not limited to products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.
2. The use of additives is prohibited with the following exceptions:
    a. Additives may be used to clean the FSE drain lines but only in such quantities that it will not cause fats, oils and grease to be discharged from the grease control equipment to the sewer system, or cause temporary breakdown of FOG that will later re-congeal in the downstream sewer system.
    b. If the product used can be proven to contain 100% bacteria, with no other additives. Approval of the use of the product must come from the Director and FSE must submit a full disclosure MSDS and certified sample results from the manufacturer of the product.
3. The use of approved additives will in no way be considered as a substitution to the maintenance procedures required herein.

## Enforcement Action

Enforcement Action against the FSE includes, but is not limited to, failure to clean or pump grease control equipment, failure to maintain grease control equipment including inspection and installation of properly functioning effluent-T and baffles, failure to install grease control equipment, failure to control FOG discharge from the FSE, and use of additives in such quantities so that FOG is pushed downstream of the FSE.

Fats, Oils and Grease blockage in downstream manhole from FSE:
If FSE inspections and field investigations determine that any fats, oils and grease interference or blockage in the sewer system, a sewage pumping station, or the wastewater treatment plant is caused by a particular food service establishment, then that food service establishment shall reimburse Metro Water Services for all labor, equipment, supplies and disposal costs incurred by Metro Water Services to clean the interference or blockage. The charges will be added to the FSEs water/wastewater bill. Failure to reimburse Metro Water Services will result in termination of water service.

FSE failure to maintain GCE after Notification or NOV due date:
If a FSE fails to pump, clean or maintain their GCE after a NOV due date, Metro Water Services may chose to pump/clean the GCE to prevent additional FOG problems downstream. The FSE will be charged for the cost of pumping and maintaining the FSE's GCE at a rate of 1-½ times the cost to Metro Water Services. Mechanical failure of the GCE will be considered a violation of Metro Code of Laws Title § 15.60.040 which pertains to the construction and maintenance of pretreatment facilities and subject to penalties of up to $10,000 / day for each day in violation (Metro Code of Laws Title § 15.60.460).

Penalties
Penalties will be issued as per the FSE Enforcement Response Plan.